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Description

This invention relates to an apparatus for dispensing articles which are coming to be known as wet wipes.

Wet tissues have been used, particularly in the travel trade, for many years. Most common are individual tissues often packed in metallised plastics foil. More recently continuous rolls of wet tissue or non-woven material have been sold for use for major cleaning jobs, and these have become known as wet wipes. The roll of wipes is perforated so that individual sheets can be detached as they are dispensed from a container through a seal. The design of the seal is critical to the success of a wet wipe product because it must comply with three major criteria. First, it must apply little enough friction to the wipe to allow it to be pulled through the seal without breaking prematurely and yet enough to allow the individual wipe to be detached when its perforation has been pulled through.

Secondly, it must be designed so that after one wipe has been detached, just enough of the second one appears downstream of the seal to allow it to be pulled through by the user. Lastly, insufficient of the second wipe should be presented to allow wicking and evaporation to occur to a significant extent, of the impregnated liquid from the immediately subsequent wipes or from the bulk of the roll.

These criteria are difficult to establish simultaneously.

In the French patent No. 775.195 a container for steelwool with an orifice for the dispensing thereof is described. Although the container and orifice may be suitable for the dispensing of steelwool protecting it against dust, moisture and chemicals, it will not effectively prevent vapor loss from the container inside nor will it provide reliable detachment if used for the dispensing of wet materials. The present invention provides a novel design for a seal suitable for use with wet wipes which meets the critera set out above.

Accordingly, the present invention provides a seal for dispensing wet wipes from a container comprising a tube of generally tapered form having a relatively wide mouth for receiving wipes and a relatively narrow orifice for dispensing them, the tube being divided circumferentially into relatively rigid outwardly flexed and relatively flexible inwardly flexed axially extending zones, so that when a wet wipe is dispensed the orifice is capable of expansion.

The seals of this invention will generally be made of plastics and formed by a plastics moulding technique such as vacuum moulding.

The seals are particularly appropriate for use with a cassette of wet wipes intended to be housed in a larger housing for use in a washroom, for example. In that case the cassette will be sold complete with the seal. However, the seals may also be used on containers of wipes intended for the retail trade.

The invention will be further described with reference to the accompanying drawings, in which Figures 1, 2 and 3 are perspective views of a seal in accordance with the invention.

Referring first to Figure 1, a seal is shown which consists of a tube having a relatively wide circular mouth (10) which tapers abruptly to an extremely elongated, waisted elliptical orifice (11). A wet wipe (12) is shown protruding through the seal in a partly dispensed form.

The circumference of the ellipse is effectively divided into four zones, two zones (13) which because of their small radius of curvature are relatively rigid and two zones (14), which are slightly concave and which because of their length of curvature are flexible and able to move appart from each other to permit passage of the wipe through the orifice.

Referring now to Figure 2, the seal shown has the same wide mouth (10) as that of Figure 1, but tapers to a three cornered orifice (15). In this instance the circumference of the tube at the orifice is divided into six zones, that is to say three relatively rigid zones (16) at the three corners and three relatively flexible zones (17) intermediate the corners where the tube is concave and its walls are able to move outwards to allow passage of the body of the wipe through the orifice.

Referring lastly to Figure 3, the seal again has a wide tubular mouth (10) of circular cross-section. The mouth runs into a conical annulus (18) before tapering into a pear-shaped orifice (19). In this instance the top of the pear forms the relatively rigid zone (20) and the two sides of the neck (21) form the relatively flexible zones which are able to expand as shown by the arrows to accommodate the body of the wipe.

It will be appreciated that because of the existence of the relatively flexible zones in the walls of the seal, the orifice will progressively flex to accommodate variations in the bulk of the wipe due to changes in the bulk of the basic web material, the quantity of impregnated liquid, and the manner of folding of the web as it is pulled from the centre of a roll through the wide mouth and the seal as the wipe is pulled. Equally the seal will exert a pressure on the wipe. This pressure has two functions. First, immediately after one wipe has been broken off, leaving only enough of the subsequent wipe protruding through the seal for it to be taken hold of and pulled through, the pressure prevents undue wicking and evaporation of the liquid with which the wipe is impregnated. Secondly, it provides resistance to the passage of the wipe and consequently allows a first wipe to be detached from a roll after a second one has just emerged through the seal.

Reliable dispensing action of the above described system is, of course, dependent on the specific ratio between the force necessary to pull the wipes through the seal out of the dispenser and the perforation strength of the wipes, i.e. the strength of the paper at the line of perforation between two successive wipe tissues.

The perforation strength is directedly related to the overall strength of the wipe material and the

specific perforation pattern which is used to separate successive wipe tissues.

The pull out force is equal to the total resistance arising from the friction caused by the dispenser seal itself and by the wipes unrolling and reaching the seal. Although in general it is quite possible to use a dispenser seal according to the present invention which in combination with the other frictional parameters of the system results in a pull out force which is greater than the perforation strength of the wipes being employed, it is preferred that the ratio between the pull out force and the perforation strength falls within the range of from 1:1 to 1:2 thereby ensuring reliable dispensing action throughout the entire wipe load of the container.

The seal according to the present invention can be particularly advantageous in preventing vapor loss from immediately subsequent wipes or from the bulk of the wipe load in the cassette, when used in combination with wet wipes provided with a hydrophobic barrier pattern as described in EP—A—0 068 722.

Claims

1. A seal for dispensing wet wipes from a container characterized in that it comprises a tube of generally tapered form having a relatively wide mouth (10) for receiving wipes and a relatively narrow orifice (11, 15, 19) for dispensing them, the tube being divided circumferentially into relatively rigid outwardly flexed (13, 16, 20) and relatively flexible inwardly flexed (14, 17, 21) axially extending zones, so that when a wet wipe is dispensed the orifice is capable of expansion.

2. A seal according to claim 1 characterized in that the orifice has an elongated waisted elliptical form (11).

3. A seal according to claim 1 characterized in that the orifice has a three cornered form (15).

4. A seal according to claim 1 characterized in that the orifice has a pear-shaped form (19).

5. A cassette for housing wet wipes characterized in that it comprises a seal according to one of the preceding claims.

6. A cassette according to claim 5 characterized in that the ratio between the pulling force necessary to dispense the wipes and the perforation strength of the wipes falls within the range of from 1:1 to 1:2.

Patentansprüche

1. Dichtung für zum Abgeben feuchter Tücher aus einem Behälter, dadurch gekennzeichnet, daß sie über ein Rohr im allgemeinen verjüngter Form mit einem relativ weiten Mund (10) zur Aufnahme der Tücher und einer relativ engen Öffnung (11, 15, 19) zur Abgabe derselben verfügt, wobei das Rohr in Umfangsrichtung in verhältnismäßig steife, nach außen gebogene (13, 16, 20) und verhältnismäßig flexible, nach innen gebogene (14, 17, 21) sich axial erstreckende Zonen unterteilt ist, so daß, wenn ein feuchtes Tuch abgegeben wird, die Öffnung expandierbar ist.

2. Dichtung nach Anspruch 1, dadurch gekennzeichnet, daß die Öffnung eine längliche, eingeschnürte, elliptische Form (11) aufweist.

3. Dichtung nach Anspruch 1, dadurch gekennzeichnet, daß die Öffnung eine dreieckige Form (15) aufweist.

4. Dichtung nach Anspruch 1, dadurch gekennzeichnet, daß die Öffnung eine birnenförmige Form (19) aufweist.

5. Kassette zur Aufnahme feuchter Tücher, dadurch gekennzeichnet, daß sie über eine Dichtung nach einem der vorausgehenden Ansprüche verfügt.

6. Kassette nach Anspruch 5, dadurch gekennzeichnet, daß das Verhältnis zwischen der Ausziehkraft, die zur Abgabe der Tücher erforderlich ist, und der Perforationsstärke der Tücher in den Bereich von 1:1 bis 1:2 fällt.

Revendications

1. Dispositif pour distribuer des serviettes humides à partir d'un récipient, caractérisé en ce qu'il comprend un tube de forme généralement conique comportant une embouchure relativement large (10) destinée à recevoir des serviettes et un orifice relativement étroit (11, 15, 19) destiné à les distribuer, le tube étant divisé circonférentiellement en des zones axiales relativement rigides fléchies vers l'extérieur (13, 16, 20) et relativement flexibles fléchies vers l'intérieur (14, 17, 21), de sorte que, lorsqu'une serviette humide est distribuée, l'orifice est à même de se distendre.

2. Dispositif d'étanchéité suivant la revendication 1, caractérisé en ce que l'orifice présente une forme elliptique allongée et resserrée en son milieu (11).

3. Dispositif d'étanchéité suivant la revendication 1, caractérisé en ce que l'orifice a la forme d'un tricorne (15).

4. Dispositif d'étanchéité suivant la revendication 1, caractérisé en ce que l'orifice est piriforme (19).

5. Cassette destinée à contenir des serviettes humides, caractérisée en ce qu'elle comprend un dispositif d'étanchéité suivant l'une quelconque des revendications précédentes.

6. Cassette suivant la revendication 5, caractérisée en ce que le rapport entre la force de traction nécessaire pour distribuer les serviettes et la résistance des perforations des serviettes est compris entre 1:1 et 1:2.

Fig.1.

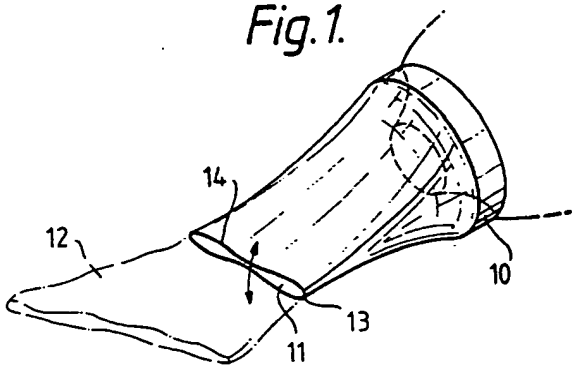

Fig.2.

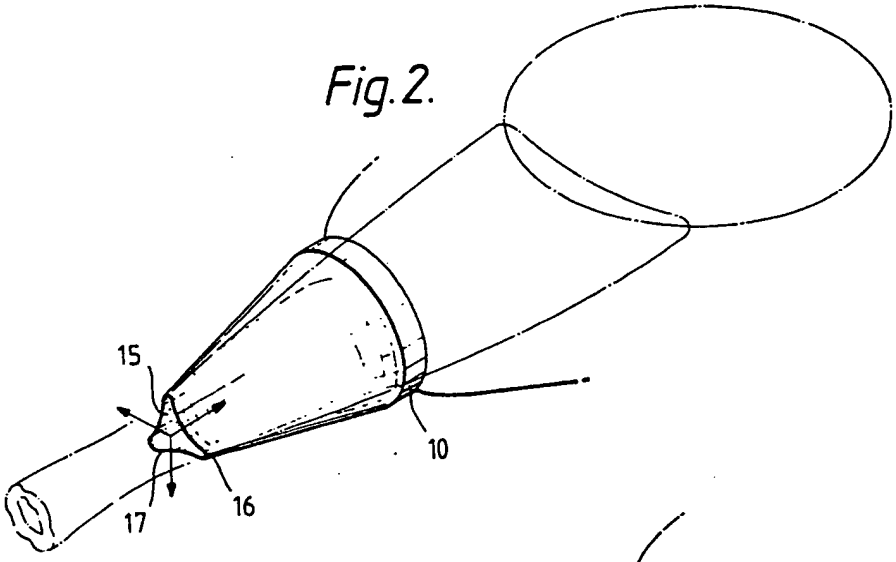

Fig.3.